Power outage

- Primary goal: keep Silicon as cold as possible
- Page cooling/interlock expert for help
- Power status for parts of the system:
- Chillers are regular power (i.e. off during power outages)
- PLC and SVXIICON on UPS power
- Cooling controls on generator power
- Circuits for backup pumps and all vacuum pumps on generator power. Once systems are on generator power. Ensure that backup pumps are running: only one pump per circuit
- Re-establish flow using backup pump (lower flow through backup pump: crank up e-valves).After power is back: Wait until generator is off
- Start chillers, switch back to regular pump, re-establish flow
- Detailed instructions for power outages

Date/Time _____

Name _____

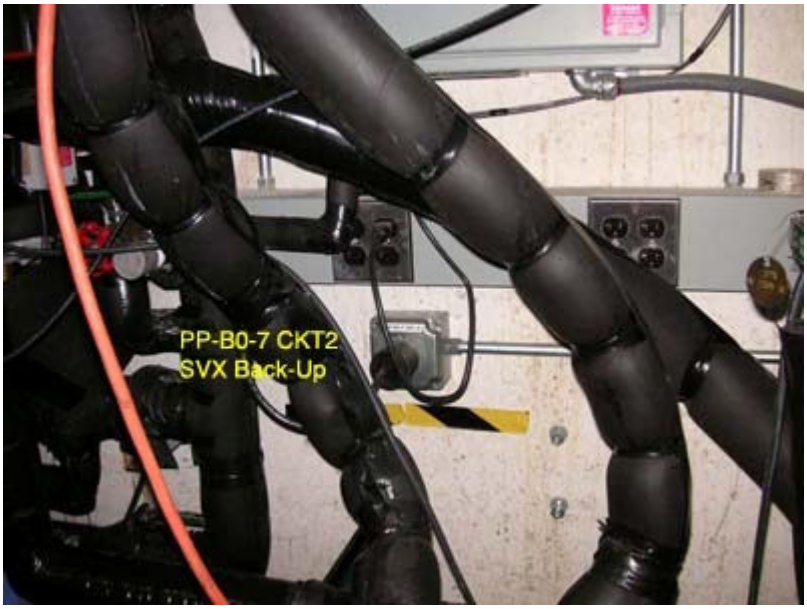
Signed _____

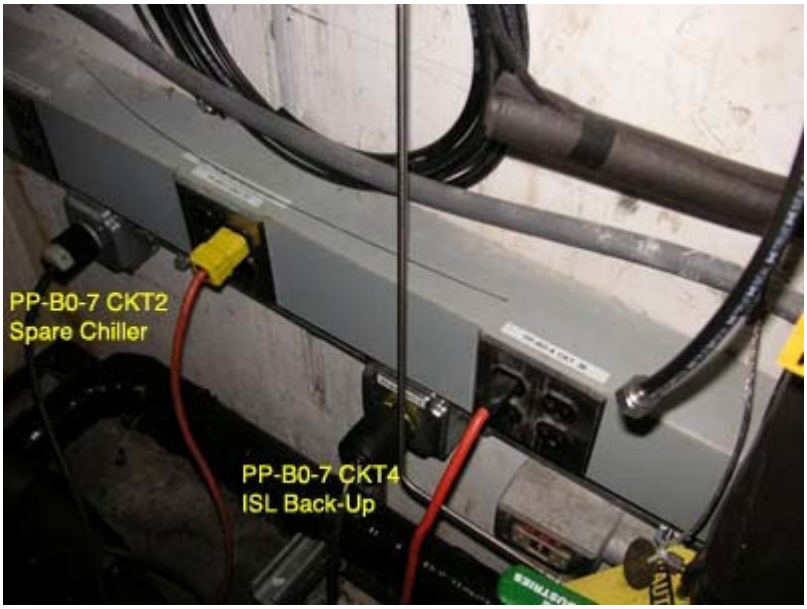
Checklist for Scheduled Power Outages
Before power outage

Alcove

- **Check the backup pumps:**

Make sure that the power cord of the backup pump for SVX chiller is connected to circuit PP-B0-7 CKT2, and the ISL chiller backup pump is connected to PP-B0-7 CKT4. The backup pump of the spare chiller must not be connected to any circuit. Note that the backup pumps are not controlled via the chiller controls but just switched on/off by relays which switch power outlets in the above-mentioned circuits. In case the spare chiller is used to replace the SVX or ISL chiller, the spare chiller pump must be connected to PP-B0-7 CKT2 or PP-B0-7 CKT4 instead (such that only a single pump is connected to either circuit).





- **Check the manual valves for the backup circuit:**

Make sure that the following manual valves are open: SVX MV2005-W,ISL MV2005-W, SPR MV2005-W. The backup pump only "sees" flow if the manual valve of the backup circuit is opened. It might have been closed to increase flow to the regular pump.

****Done by Silicon Cooling Expert!!!!

First Floor

- **Backup of PLC code:**

Make sure the hardware key for SoftShop? is connected to the PC. Connect to the PLC and save the running program to hard disk.

- **Check that important devices are on generator power or UPS:**

o UPS power from PP-UPS1 CKT9 (Rack 1RR34F): PC SVXIICON, LCD monitor, 505 master crate, 505 crate #3, mini-switch
o UPS power from PP-UPS1 CKT12 (Rack 1RR34G): 505 crate #1, 505 crate #2
o Generator power from PP-B0-7 CKT16 (Rack 1RR34F): 505 master crate fan tray, SVXINTER crate
o Generator power from PP-B0-7 CKT18 (Rack 1RR34G): 5V power supply for RH sensors, 24V power supplies #1, #2, #3

- **Check iFix settings for backup pumps:**

On the SVX Chiller and ISL Chiller iFix pages, the backup pump must be in "Auto".

During power outage

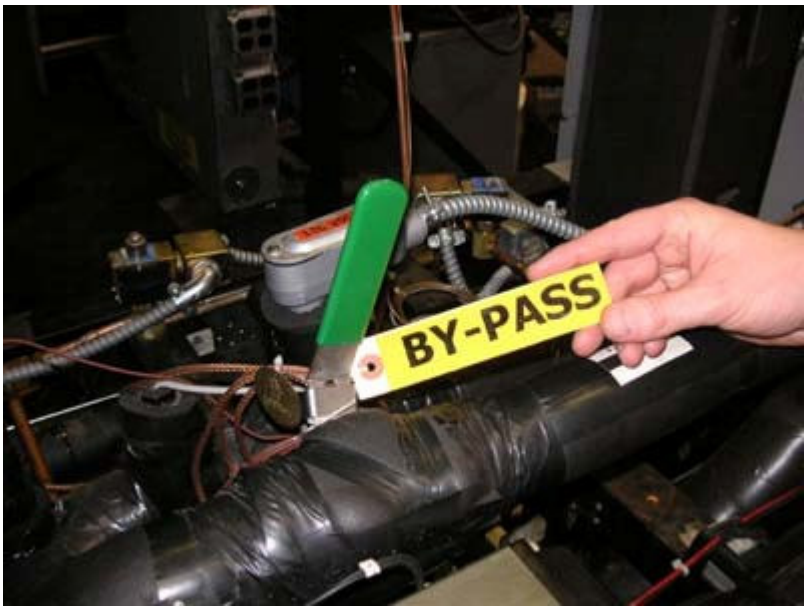
Alcove

- **Check the backup pumps:**

Check that the backup pumps are running. If not, start them with the manual "ON" button in iFix.

- **Increase flow if necessary:**

The through-put of coolant is smaller for the backup pump compared to the regular pump. In case of too low flow, fully close the manual bypass valve on the chillers (SVX MV1995-W, ISL MV1995-W, SPR MV1995-W). Remember to re-adjust these valves after power is back, otherwise, the chillers will trip on high pressure.



First floor

- **Check communications:**

Check if the mini-switch which connects SVXIICON and the PLC crates is still powered and that all PLC readings are available in iFix.

- **Check vacuum pumps**:

Make sure the vacuum pumps are still operational. If not, switch them to "AUTO" and click "REQUEST VACUUM" (both in iFix).

- **Re-establish flow:**

Acknowlegde trips in this order: ISL → SVX → L00 and open any tripped supply valve.

After power outage

Alcove

- Wait for Diesel generator to go offline:

The Diesel generator takes 10-15 minutes to go offline after power is restored. The small power glitch during the transition will most probably trip some flows.

- Start up chillers:

Start chillers with iFix "START" button. In case of a fault, try the start button twice. If this is still impossible, start the chillers by hand (switch on front side must be in "local"). Return the backup pump to "AUTO" in case it was still on manual. Adjust the manual bypass valves (SVX MV1995-W, ISL MV1995-W, SPR MV1995-W) to a pressure of about 25 psi.

First floor

- Re-establish flow:

Acknowlegde trips in this order: ISL → SVX → L00 and open any tripped supply valve. You can most probably set the final valve opening values directly for SVX, but you have to slowly increase the valve openings for ISL to avoid trips, starting from 50%.